

AMENDMENTS TO THE CLAIMS

This listing of claims replaces all prior versions, and listings, of claims in the application.

1. (currently amended) An articulated chain for drive transmission in bicycles, comprising:

a plurality of external links (2) each of which exhibits at least a first external plate (4) having a first end (4a) having an upper end portion and a lower end portion [[an]] and a second end (4b) having an upper end portion and a lower end portion, and a second external plate (5), parallel to the first external plate (4) and having a first end (5a) having an upper end portion and a lower end portion and a second end (5b) having an upper end portion and a lower end portion;

a plurality of rotation pivots (6) interpositioned between the first external plate (4) and the second external plate (5) of each external link (2) in positions at the first ends (4a, 5a) and the second ends (4b) (4b, 5b) of the respective first external plate (4) and the second external plate (5);

a plurality of internal links (3), each of which internal links (3) exhibits at least a first internal plate (7) having a first end (7a) having an upper end portion and a lower end portion and a second end (7b) having an upper end portion and a lower end portion and a second internal plate (8), parallel to the first internal plate (7) and having a first end (8a) having an upper end portion and a lower end portion and a second end (8b) having an upper end portion and a lower end portion; and

a plurality of bushes (9) interpositioned between the first internal plate (7) and the second internal plate (8) of each internal link (3) at the first ends (7a, 8a) and the second ends (7b, 8b) thereof, each of the rotation pivots (6) being inserted coaxially into a bush (9) of the plurality of bushes (9), for defining an alternating succession of the external links (2) and the internal links (3) which are rotatably and consecutively connected about respective main rotation axes (X), each upper end portion of each end of each internal and external plate being above where a pivot (6) joins or passes through an end and each lower end portion of each end of each internal and external plate being below where a pivot (6) joins or passes through an end, a spacer (13a, 13b) being provided (a) where each upper end portion of an external plate is adjacent an upper end portion of an internal plate and (b) where each lower end portion of an external plate is adjacent a lower end portion of an internal plate, each spacer (13a, 13b) being selected from the group consisting of (a) a protuberance extending from an end portion of an internal plate toward one or more locations within the periphery of an end portion of an external plate or from an end portion of an external plate toward one or more locations within the

periphery of an end portion of an internal plate, or (b) an end portion of an external plate being bent out of the plane of the external plate toward the adjacent end portion of an internal plate or an end portion of an internal plate being bent out of the plane of the internal plate toward the adjacent end portion of an external plate;

each of the plurality of bushes (9) defining, with a respective pivot (6), a spherical-coupling surface for allowing a rotation between an internal link (3) and an adjacent external link (2), about a perpendicular axis to the main rotation axis (X); and anti-rotation elements (12) which reduce a possibility of rotation with respect to an alignment direction (y) of each pair of links being an internal link (3) and an external link (2),

wherein the anti-rotation elements (12) comprise spacers (13a, 13b) interpositioned between the external plates (4, 5) of each external link (2) and the internal plates (7, 8) of each internal link (3) at the respective ends thereof, the spacers (13a, 13b) always being in contact with the internal plates (7, 8) and always reducing a possibility of torsional rotation between each pair of external links (2) and internal links (3) about a longitudinal alignment axis (Y) of the pair which is perpendicular to a corresponding main rotation axis (X) thereof.

2. (cancelled)

3. (currently amended) The chain of claim 1, wherein the spacers at least some of the spacers (13a, 13b) are a protuberance extending from an end portion of an internal plate toward one or more locations within the periphery of an end portion of an external plate comprise, for each main rotation axis (X), a first pair of the spacers (13a) interpositioned between the first external plate (4) and the first internal plate (7), and a second pair of the spacers (13b) interpositioned between the second external plate (5) and the second internal plate (8), and wherein each of the first pair and the second pair of spacers is formed by two spacers arranged in proximity of edges of the respective first and second external plate and the first and second internal plate, in positions which are symmetrically opposite with respect to the longitudinal axis (Y) of the link.

4. (currently amended) The chain of claim 1, wherein the spacers at least some of the spacers (13a, 13b) comprise, for each main rotation axis (X), a first spacer (13a) interpositioned between the first external plate (4) and the first internal plate (7) and a second spacer (13b) interpositioned between the second external plate (5) and the second internal plate (8) and wherein the first spacer (13a) and the second spacer (13b) are arranged in proximity of edges of

the respective external plate (4) and the internal plate (7) and are aligned along a straight line which is parallel to the corresponding main rotation axis (X) are a protuberance extending from an end portion of an external plate toward one or more locations within the periphery of an end portion of an internal plate.

5. (currently amended) The chain of claim [[3]] 1, wherein ~~each of the spacers~~ at least some of the spacers (13a, 13b) ~~exhibits a convex conformation having a spherical profile~~ are an end portion of an external plate being bent out of the plane of the external plate toward the adjacent end portion of an internal plate.

6. (currently amended) The chain of claim [[3]] 1, wherein the spacers at least some of the spacers (13a, 13b) ~~are solidly constrained to the external plates (4, 5) of each external link (2)~~ are an end portion of an internal plate being bent out of the plane of the internal plate toward the adjacent end portion of an external plate.

7. (currently amended) The chain of claim [[3]] 1, wherein ~~the spacers~~ at least some of the spacers (13a, 13b) ~~are solidly constrained to the internal plates (7, 8) of each internal link (3)~~ are located in proximity of an edge of an internal plate or of an external plate.

8. (currently amended) The chain of claim [[6]] 1, wherein ~~each of the~~ at least some of the spacers (13a, 13b) ~~is defined by exhibit~~ a convex swell obtained by plastic deformation of an edge zone of a corresponding external plate (4, 5) conformation.

9. (currently amended) The chain of claim [[6]] 1, wherein ~~each~~ at least some of the spacers (13a, 13b) ~~is defined by a shaped element connected to an edge zone of a corresponding external plate (4, 5)~~ exhibit a convex conformation having a spherical profile.

10. (currently amended) The chain of claim [[7]] 1, wherein ~~each~~ at least some of the spacers (13a, 13b) ~~is defined~~ are defined by a convex swelling obtained by plastic deformation of an edge zone of a corresponding internal plate (7, 8).

11. (currently amended) The chain of claim [[8]] 5, wherein ~~each of the spacers (13a, 13b)~~ is defined by a shaped element connected to an edge zone of a corresponding internal plate (7, 8) the end portion of the bent external plate comprises three sections, an upper section bent out of

plane toward the adjacent end portion of an internal plate, a lower section bent out of plane toward the adjacent end portion of an internal plate, and a central unbent section parallel to the adjacent end portion of an internal plate.

12. (currently amended) The chain of claim [[4]] 5, wherein, with respect to the end portion of the bent external plate, said end portion comprising an upper half and a lower half, said upper half being bent out of plane toward the adjacent end portion of an internal plate and the lower half being bent out of plane toward the adjacent end portion of an internal plate each of the spacers (13a, 13b) exhibits a convex conformation having a spherical profile.

13-18. (cancelled)

19. (currently amended) The chain of claim 1, further comprising wherein the antirotation elements ~~(12)~~ comprise swellings (14a, 14b) which are solidly connected to the external plates (4, 5) of each external link (2) and are arranged centrally thereon, the swellings (14a, 14b) projecting internally of a chamber (15) defined between the external plates (4, 5) and being of a dimension which reduces a breadth of the chamber (15) at central portions (4c, 5c) of the external plates (4, 5) ~~to a breadth of a like chamber (16) comprised between the internal plates (7, 8).~~

20. (currently amended) The chain of claim 19, wherein the swellings (14a, 14b) exhibit a convex conformation, ~~having a spherical profile.~~

21. (currently amended) The chain of claim 19, wherein the swellings (14a, 14b) are obtained by plastic deformation of central portions ~~(4c, 5c) of the external plates (4, 5).~~

22. (currently amended) The chain of claim [[1]] 19, wherein the swellings (14a, 14b) are obtained by recessing and projecting plastic deformations of central portions ~~(4c, 5c) of the external plates~~ a dimension which reduces the breadth of the chamber (15) at central portions (4c, 5c) of the external plates (4, 5) to a breadth of a like chamber (16) comprised between the internal plates (7, 8).

23. (original) The chain of claim 19, wherein the swellings (14a, 14b) are defined by shaped elements connected to central portions (4c, 5c) of the external plates (4, 5).

24. (currently amended) The chain of claim 1, wherein each rotation pivot (6) exhibits a barrel shape having a generally cylindrical surface but also having a raised annular band around the midsection of the barrel, the raised annular band having an arc-shape in cross-section profile, the respective bush (9) exhibiting spherical profile and the respective bush (9) exhibits a seating (9a) having a straight profile.

25. (currently amended) The chain of claim 1, wherein each bush (9) exhibits a seating (9a) having a spherical projecting profile which is annular and which is located on the inner surface of the bush (9) facing and the respective rotation pivot (6), the respective rotation pivot (6) exhibiting exhibits a straight cylindrical shape having a straight profile.

26. (cancelled)

27. (currently amended) The chain of claim ~~[[24]]~~ 1, wherein ~~the spherical profile is defined by an annular element (20) associated to the~~ each rotation pivot (6) exhibits a barrel shape having a generally cylindrical surface but also having an annular element (20) around the midsection of the barrel providing a raised curved surface extending toward the respective and the bush (9), the respective bush (9) has exhibiting a seating (9a) having a straight profile.

28. (cancelled)

29. (currently amended) The chain of claim ~~[[24]]~~ 25, wherein the ~~spherical profile~~ projecting profile is defined by an annular element (20) ~~associated to~~ projecting from the surface of the seating (9a) of the bush (9) and the respective rotation pivot (6) has a straight profile.

30. (cancelled)

31. (new) The chain of claim 19, wherein the swellings (14a, 14b) exhibit a convex conformation having a spherical profile.